Major Findings

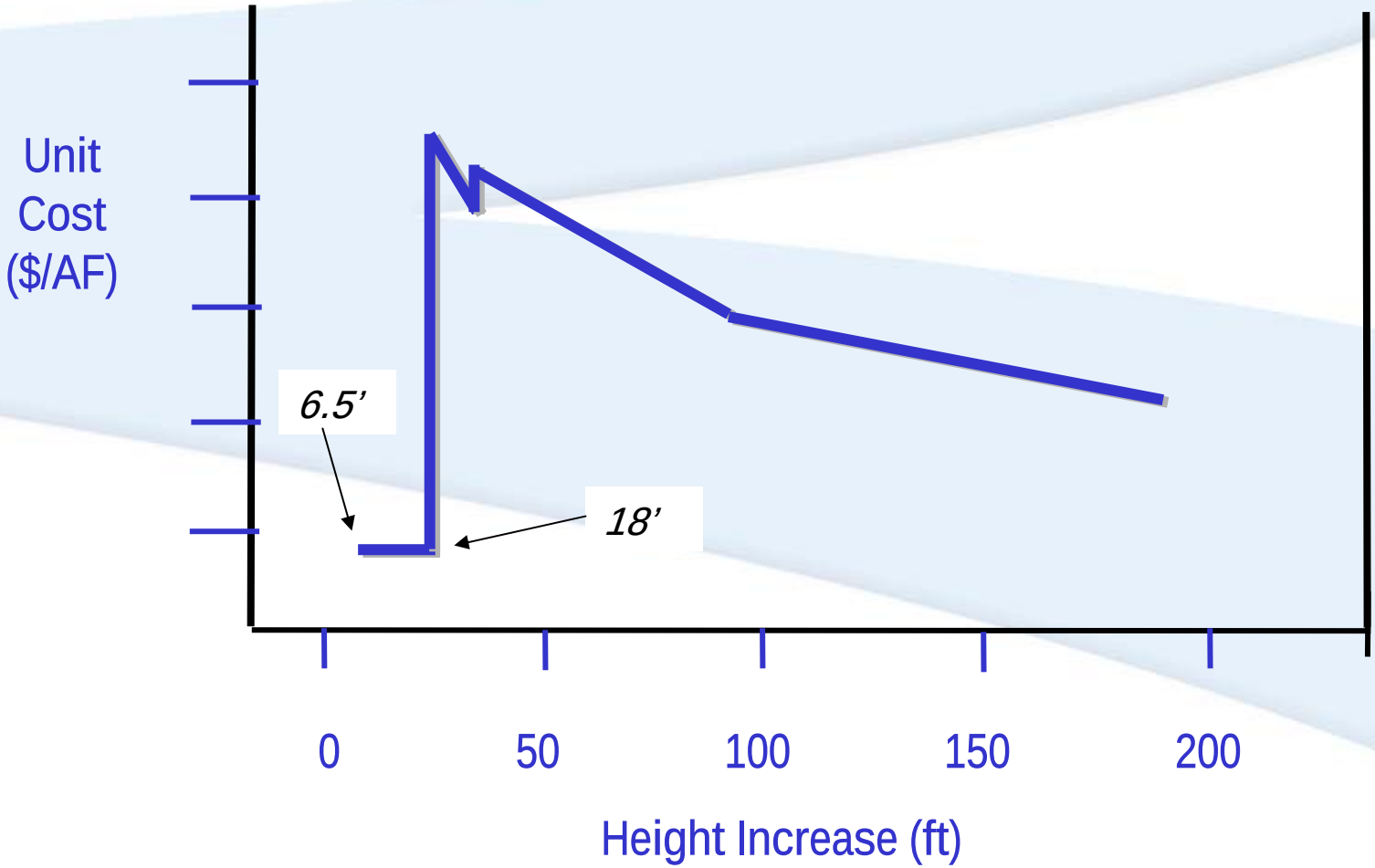
Preliminary Cost and Water Supply Estimates

(note: analysis does not include common assumptions baseline)

Project	Capital Cost ($millions)	Storage Capacity (taf)	Water Supply (taf/year)
Shasta Enlargement	$180 - 280	300 - 635	50 - 80
NODOS	$1,100 - 2,400	1,800	300 - 440
In-Delta	$700 - 800	217	120 - 140
Los Vaqueros	$810 - 1,300	200 - 400	100-165 (EWA)
Upper San Joaquin	$450 - 800	250 - 1,200	100 - 235

Shasta Lake Enlargement

- There are distinct breakpoints in costs with increasing dam heights



Shasta Lake Enlargement

Height of Dam Raise (feet)	Increased Storage (TAF)	Dry Year Supplies (TAF/year)
6.5	290	80
18	600	150

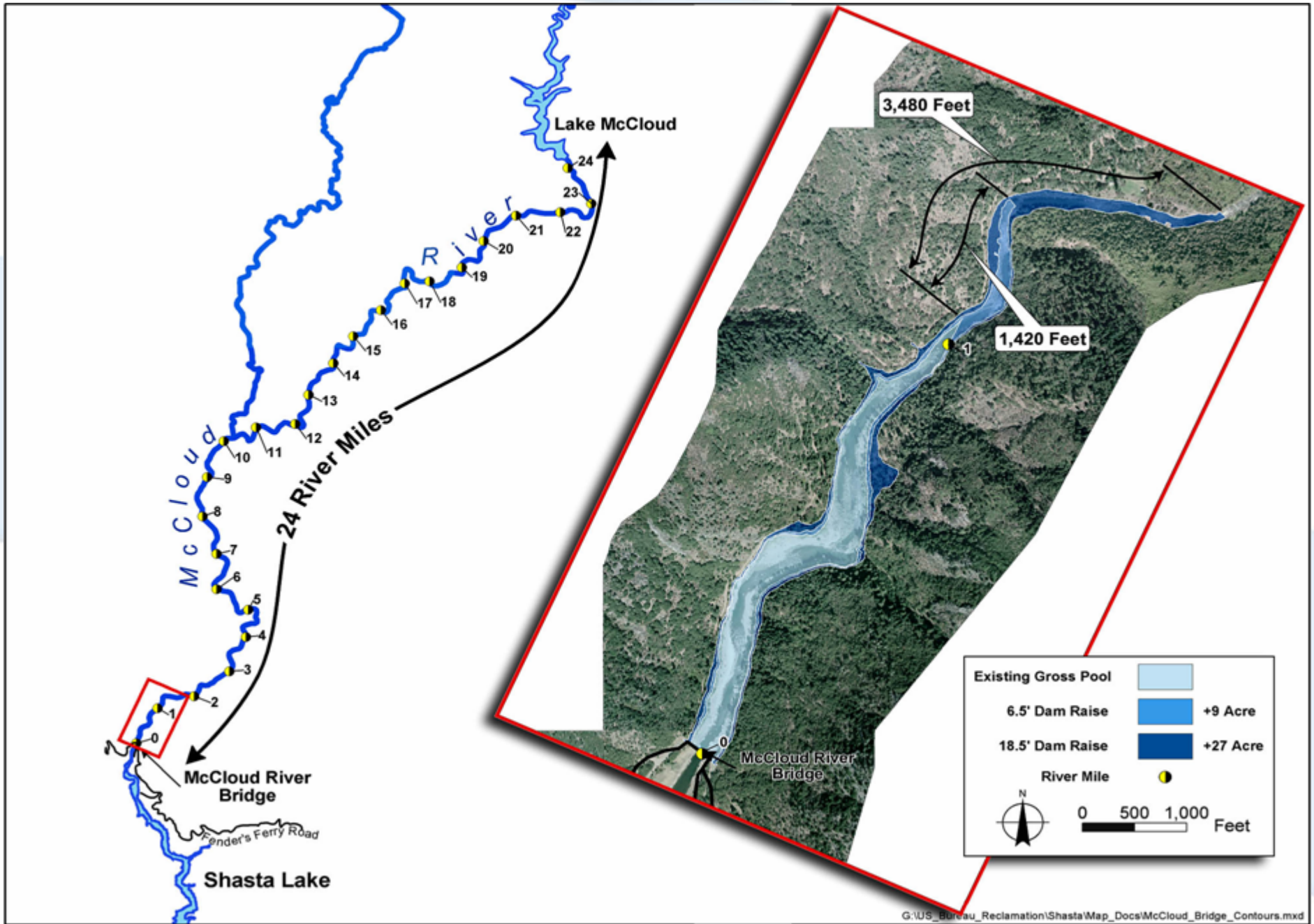
Shasta Enlargement

- Potential impacts to the McCloud River from raising Shasta Dam

California Public Resources Code 5093.542(c)

"Except for participation by the Department of Water Resources in studies involving the technical and economic feasibility of enlargement of Shasta Dam, no department or agency of the state shall assist or cooperate with, whether by loan, grant, license, or otherwise, any agency of the federal, state or local government in the planning or construction of any dam, reservoir, diversion, or impoundment facility that could have an adverse effect on the free-flowing condition of the McCloud River, or on its wild trout fishery."

McCloud River Inundation Map



McCloud River Effects

Dam Raise	Length of River Affected	Percent of Designated Reach Affected	Increase in Inundation Area
6.5 ft	1,420 ft	1.1 %	9 acres
18 ft	3,480 ft	2.7 %	27 acres

Shasta Enlargement

- Reclamation and DWR will report on both:
  - Potential impacts to the McCloud River
  - Potential benefits of increasing Shasta Lake cold water pool

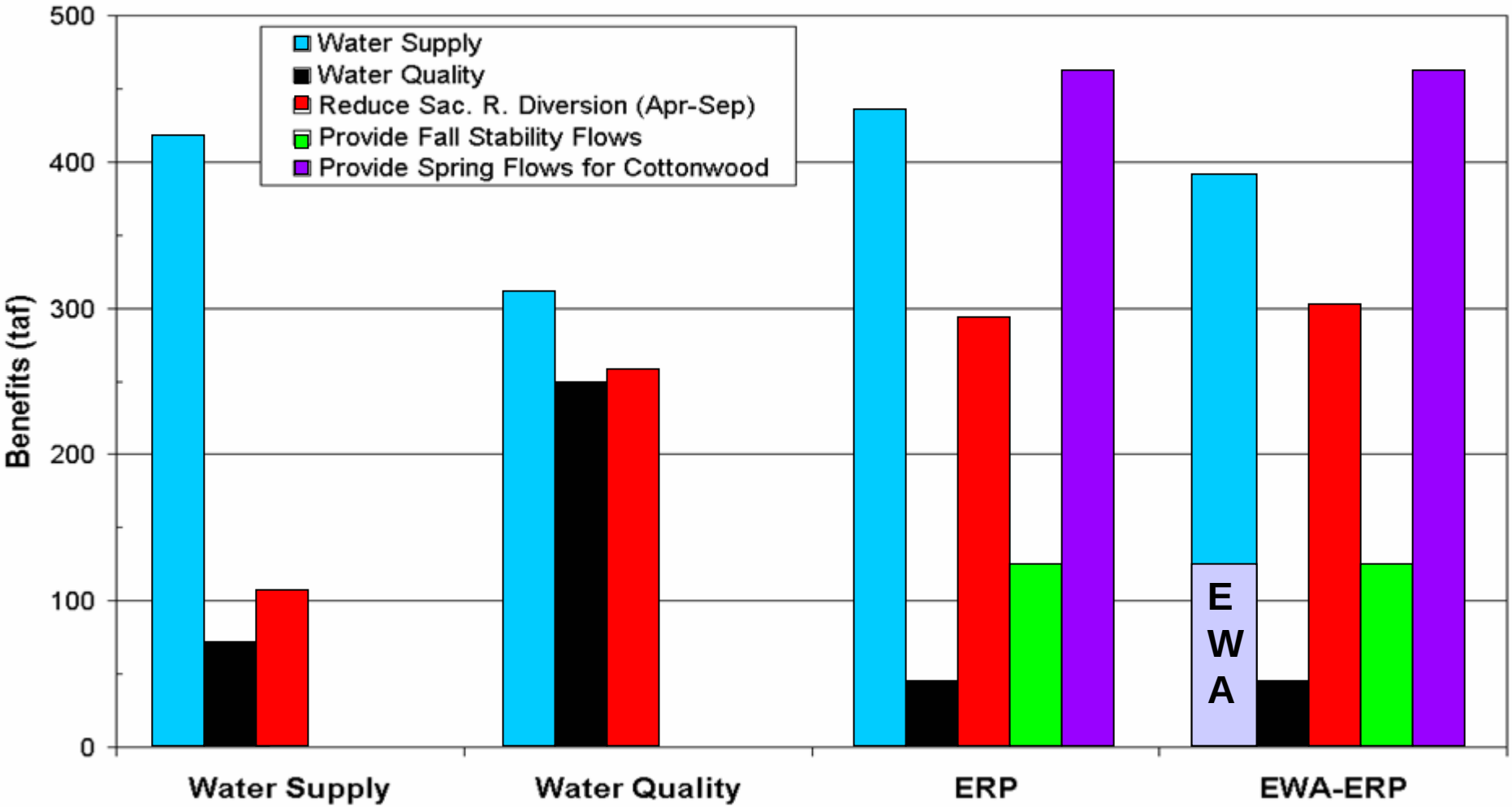
North of Delta Offstream Storage

- Construction of dams at Sites and Newville locations is technically feasible.
- No endangered plant and wildlife species that cannot be mitigated. Fewer potential environmental impacts at Sites Reservoir location than Newville Reservoir.
- Broad variety of water supply, water quality, and diversion management benefits.

North of Delta Offstream Storage

- Flow Regime of Sacramento River
  - Geomorphology and meander migration
  - Related ecosystem processes
- In 2002, formed a Technical Advisory Group to help identify potential impacts and benefits of NODOS
  - Draft of Flow Regime Report under agency review

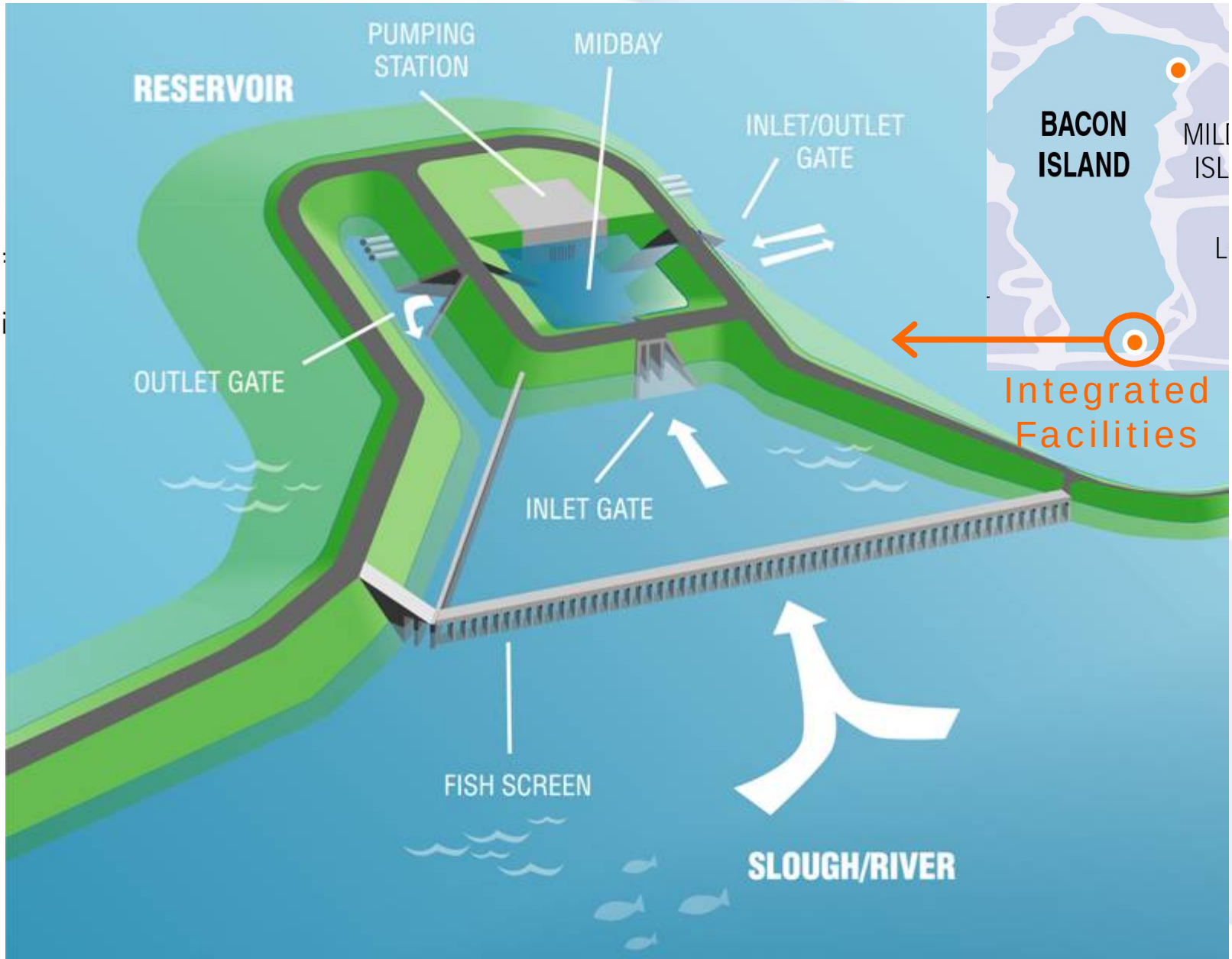
North of Delta Offstream Storage
Preliminary Estimates of Benefits



In-Delta Storage

- Re-engineered In-Delta Storage Project construction and operation meets State feasibility requirements.
- Average annual water supply 100 to 136 TAF/yr. Could also improve operational flexibility, water quality, habitat and seismic stability.
- Additional water quality field and modeling evaluations are necessary to refine project operations for organic carbon, dissolved oxygen, and temperature.

In-Delta Storage Proposed Facilities



In-Delta Storage

Cost & Economic Benefit Estimates

- Capital Cost: $774 million
- Annual Cost: $60 million
- Annual Water Supply Benefits: $23 to $26 million

In-Delta Storage

- DWR completed the *Draft Executive Summary Report* for public review in February 2004
- Comments are were March 20, 2004
- Key decisions on future project actions for In-Delta Storage and other Surface Storage Projects planned before July 2004

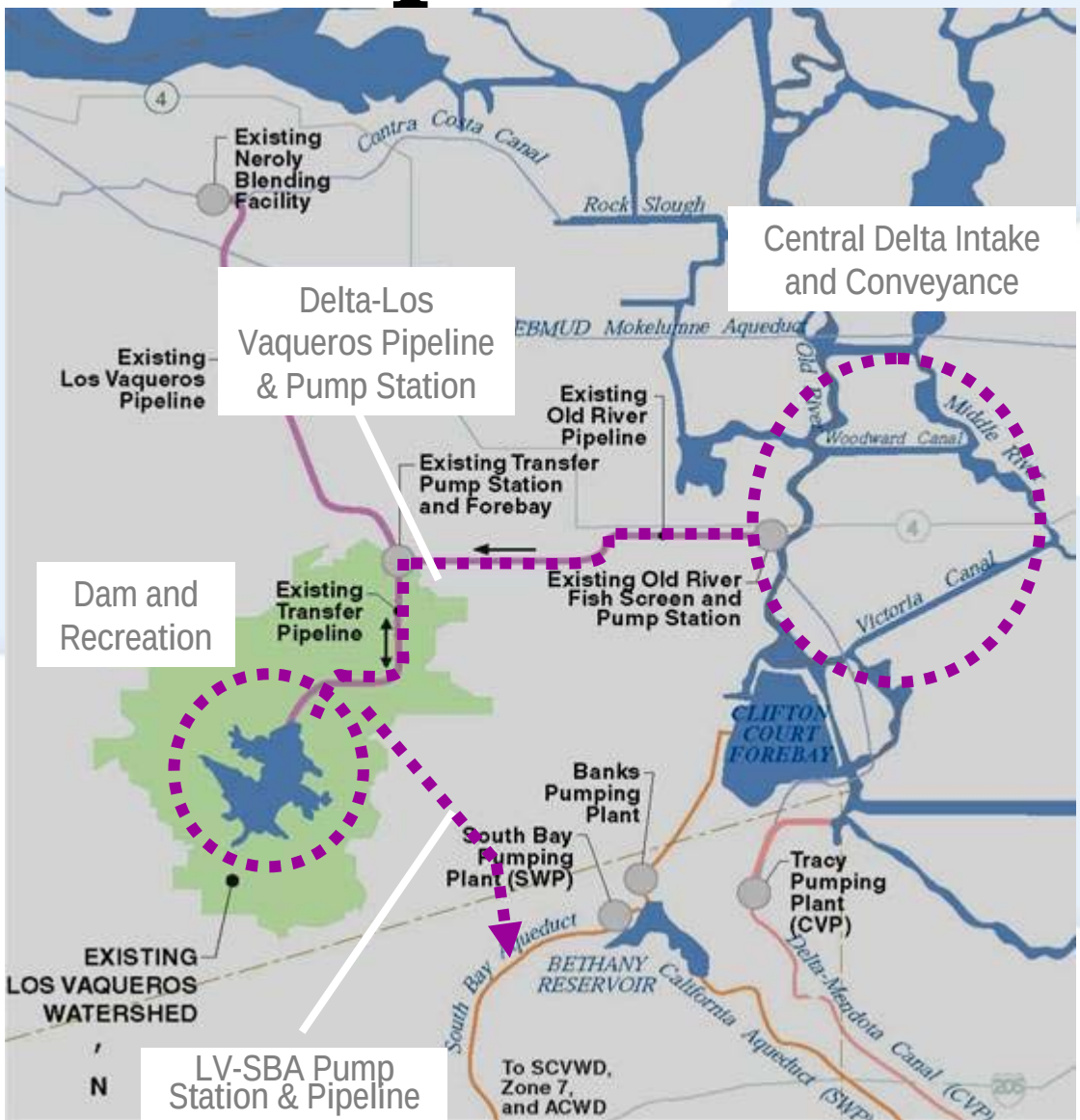
In-Delta Storage Comments

- Supporting Comments
  - Balanced program for enhancing Delta habitat and water management flexibility
  - Project will create wetland habitat, improve water supplies, strengthen Delta levees, create jobs and generate sales tax revenue in Contra Costa County
  - Support ecosystem restoration and habitat benefits
  - Environmentally friendly way of developing a new source of water for California

In-Delta Storage Comments

- Issues of Concern
  - Water quality and operations modeling does not meet all WQMP and PDA requirements. As a result, project yield estimates are overstated
  - Peer review of economic evaluation methodology is supported by stakeholders to help quantify all potential project benefits
  - Local concerns include seepage and erosion protection, land use changes, mitigation for agricultural impacts, and recreation
  - Risk analysis omitted the EBMUD Mokelumne Aqueduct, PG&E Gas Lines, Santa Fe Railroad and potential effects on navigation

Los Vaqueros Reservoir Expansion



Los Vaqueros Reservoir Expansion

- Operate for Water Quality, Reliability and EWA
- Provide 250 TAF to meet drought shortages
- Provide 100 to 165 TAF/yr to EWA
- Lower total organic carbon by about one third, and chloride and bromide by about half during droughts

Los Vaqueros Reservoir Expansion

- CCWD Voters Approved Measure N

Results from Contra Costa County website

N-Expand Los Vaqueros Advisory Measure Only

Completed Precincts: 319 of 319

	Vote Count	Percentage
Yes	53,546	61.6%
No	33,320	38.4%

CONTRA COSTA TIMES

Tuesday March 02, 2004

Los Vaqueros studies winning,

By *Mike Taugher*

An advisory vote that leaves the door open for expansion of a 6-year-old reservoir in East County appeared certain to pass in early returns…

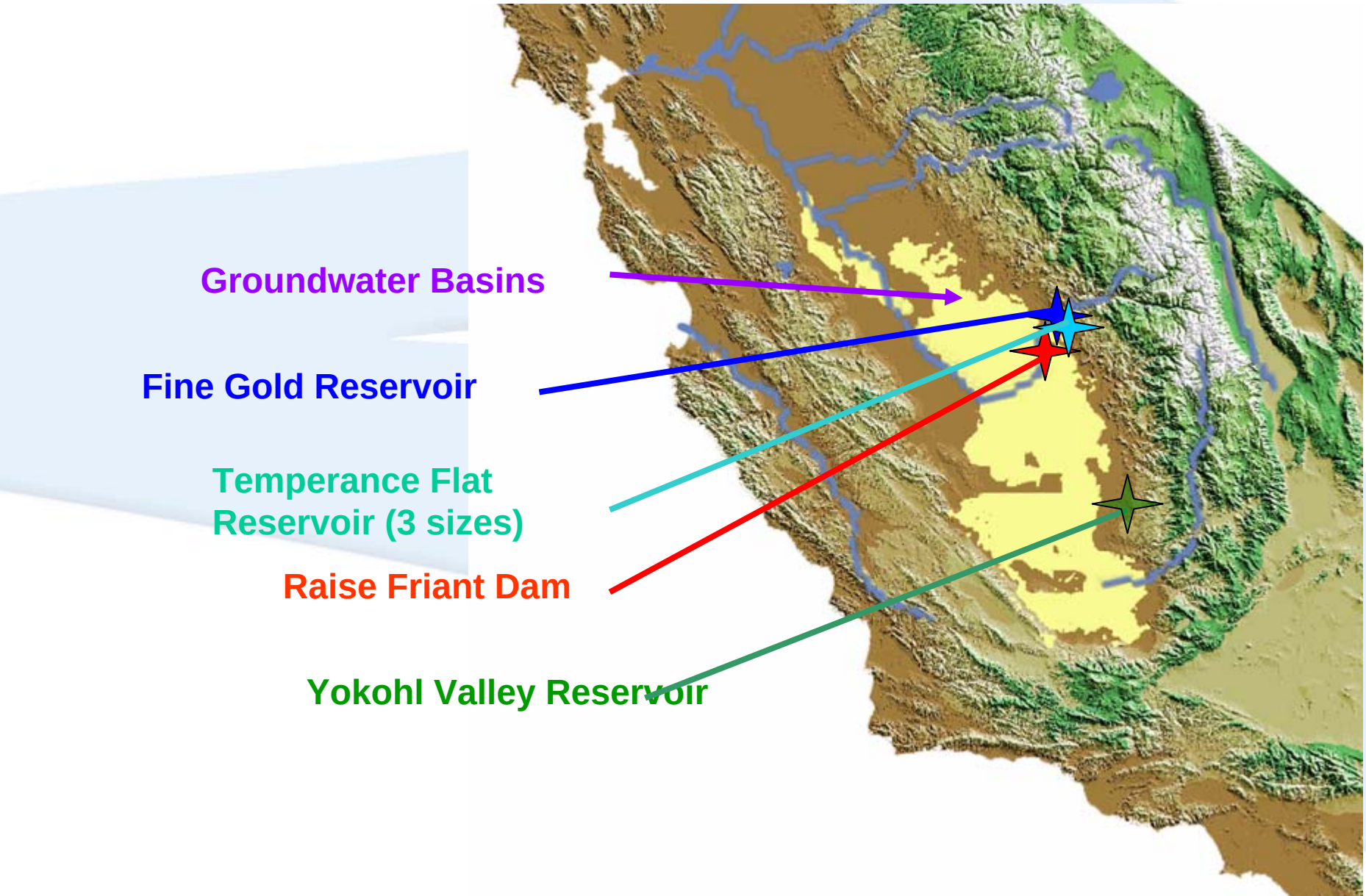
Los Vaqueros Reservoir Expansion

- MOU between 11 local/State/federal agencies extended
- DWR and Reclamation preparing contracts to begin the formal environmental documentation process
- A Notice of Intent/Notice of Preparation to be issued Spring 2004

Upper San Joaquin River Storage

- Six surface storage options appear technically feasible
- Regional interest in additional conjunctive management
- Average annual new water supply up to 235 TAF/yr
- Could contribute to:
    - Restoring the San Joaquin River
    - Improving water quality in the San Joaquin River
    - Increasing water supply reliability

Potential Storage Options



Upper San Joaquin River Storage

- Scientifically-based environmental restoration plan for upper San Joaquin River is necessary to study the project's contribution to restoration of the river
- DWR and Reclamation continue to work with local water agencies, environmental groups, and local stakeholders to advance the development of a restoration plan